

ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

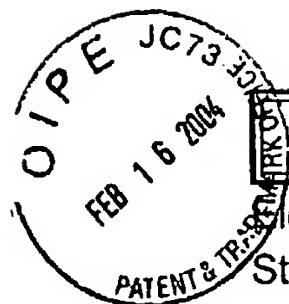
Stylesheet Version v18.0

Title of Invention	System and Method for Antenna Diversity Using Joint Maximal Ratio Combining																																																																																																														
<p>Application Number: 10/695229</p> <p>Confirmation Number: 4971</p> <p>First Named Applicant: Gary Sugar</p> <p>Attorney Docket Number: Cognio18US2</p> <p>Art Unit: 2682</p> <p>Search string: (6177906 or 6369758 or 6037898 or 5982327 or 5274844 or 20030002450 or 20030139194 or 20030125090 or 20030108117 or 20030032423 or 20020196842).pn.</p> <p>US Patent Documents</p> <p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td>RP</td><td>1</td><td>6177906</td><td>2001-01-01</td><td>Petrus, Paul</td><td></td><td>342</td><td>378</td></tr><tr><td>RP</td><td>2</td><td>6369758</td><td>2002-04-01</td><td>Zhang, Deming</td><td></td><td>342</td><td>383</td></tr><tr><td>RP</td><td>3</td><td>6037898</td><td>2000-03-01</td><td>Parish et al</td><td></td><td>342</td><td>174</td></tr><tr><td>RP</td><td>4</td><td>5982327</td><td>1999-11-01</td><td>Vook et al</td><td></td><td>342</td><td>380</td></tr><tr><td>RP</td><td>5</td><td>5274844</td><td>1993-12-01</td><td>Harrison et al</td><td></td><td>455</td><td>25</td></tr></tbody></table> <p>US Published Applications</p> <p>Note: Applicant is not required to submit a paper copy of cited US Published Applications</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Pub. No.</th><th>Date</th><th>Applicant</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td>RP</td><td>1</td><td>20030002450</td><td>2003-01-01</td><td>Jalali et al</td><td></td><td>370</td><td>294</td></tr><tr><td>RP</td><td>2</td><td>20030139194</td><td>2003-07-01</td><td>Onggosanusi et al</td><td></td><td>455</td><td>506</td></tr><tr><td>RP</td><td>3</td><td>20030125090</td><td>2003-07-01</td><td>Zeira, Ariela</td><td></td><td>455</td><td>562</td></tr><tr><td>RP</td><td>4</td><td>20030108117</td><td>2003-06-01</td><td>Ketchum et al</td><td></td><td>375</td><td>295</td></tr><tr><td>RP</td><td>5</td><td>20030032423</td><td>2003-02-01</td><td>Boros et al</td><td></td><td>455</td><td>423</td></tr><tr><td>RP</td><td>6</td><td>20020196842</td><td>2002-12-01</td><td>Onggosanusi et al</td><td></td><td>375</td><td>148</td></tr></tbody></table>								init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass	RP	1	6177906	2001-01-01	Petrus, Paul		342	378	RP	2	6369758	2002-04-01	Zhang, Deming		342	383	RP	3	6037898	2000-03-01	Parish et al		342	174	RP	4	5982327	1999-11-01	Vook et al		342	380	RP	5	5274844	1993-12-01	Harrison et al		455	25	init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass	RP	1	20030002450	2003-01-01	Jalali et al		370	294	RP	2	20030139194	2003-07-01	Onggosanusi et al		455	506	RP	3	20030125090	2003-07-01	Zeira, Ariela		455	562	RP	4	20030108117	2003-06-01	Ketchum et al		375	295	RP	5	20030032423	2003-02-01	Boros et al		455	423	RP	6	20020196842	2002-12-01	Onggosanusi et al		375	148
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass																																																																																																								
RP	1	6177906	2001-01-01	Petrus, Paul		342	378																																																																																																								
RP	2	6369758	2002-04-01	Zhang, Deming		342	383																																																																																																								
RP	3	6037898	2000-03-01	Parish et al		342	174																																																																																																								
RP	4	5982327	1999-11-01	Vook et al		342	380																																																																																																								
RP	5	5274844	1993-12-01	Harrison et al		455	25																																																																																																								
init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass																																																																																																								
RP	1	20030002450	2003-01-01	Jalali et al		370	294																																																																																																								
RP	2	20030139194	2003-07-01	Onggosanusi et al		455	506																																																																																																								
RP	3	20030125090	2003-07-01	Zeira, Ariela		455	562																																																																																																								
RP	4	20030108117	2003-06-01	Ketchum et al		375	295																																																																																																								
RP	5	20030032423	2003-02-01	Boros et al		455	423																																																																																																								
RP	6	20020196842	2002-12-01	Onggosanusi et al		375	148																																																																																																								




Signature

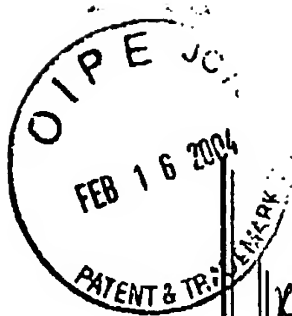
Examiner Name	Date
<i>Rong Xu</i>	8/21/04



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

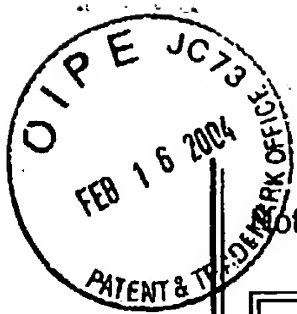
Electronic Version v18
Stylesheet Version v18.0

Title of Invention	System and Method for Antenne Diversity Using Joint Maximal Ratio Combining						
Application Number: 10/695229							
Confirmation Number: 4971							
First Named Applicant: Gary Sugar							
Attorney Docket Number: Cognio18US2							
Art Unit: 2682							
Search string:				(5437055 or 5507035 or 4599734 or 5491723 or 5394435 or 4639914 or 6157340 or 6124824 or 6122260 or 6195045 or 6147985 or 6044120 or 6038272 or 6349219 or 6327310 or 6307882 or 6058105 or 6442214 or 6144711 or 6317466 or 6097771 or 6377631 or 6298092 or 6377636 or 6351499 or 6400699 or 5610617 or 6252548 or 5577265 or 6211671 or 6008760 or 6370182 or 6362781 or 6377819 or 6400780 or 6331837 or 6473467 or 6636568 or 20020064246 or 20020001316 or 20020136170 or 20020141355 or 20020172269 or 20020064246 or 20020001316 or 20020072392 or 20020122501 or 20020158801 or 20020159537 or 20020039884 or 20020067309 or 20020127978 or 20020085643 or 20020118781 or 20020122383 or 20020111142 or 20020102950 or 20010046255 or 20020024975 or 20010012764 or 20010053143 or 20010015994 or 20020034191).pn.			
US Patent Documents							
Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
2p	1	5437055	1995-07-25	Wheatley, III		455	33.3
2p	2	5507035	1996-04-09	Bantz et al.		455	133
2p	3	4599734	1986-07-08	Yamamoto		375	40
2p	4	5491723	1996-02-13	Diepstraten		375	267



RV	5	5394435	1995-02-18	Weerackody		375	206
RP	6	4639914	1987-01-27	Winters		370	110.1
RP	7	6157340	2000-12-05	Xu et al		342	174
RP	8	6124824	2000-09-26	Xu et al		342	174
RV	9	6122260	2000-09-19	Liu et al		370	280
RP	10	6195045	2001-02-27	Xu et al	B1	342	368
RP	11	6147985	2000-11-14	Bar-David et al			
RP	12	6044120	2000-03-28	Bar-David et al			
RP	13	6038272	2000-03-14	Golden			
RP	14	6349219	2002-02-19	Hochwald et al			
RP	15	6327310	2001-12-04	Hochwald et al			
RP	16	6307882	2001-10-23	Marzetta			
RP	17	6058105	2000-05-02	Hochwald et al			
RP	18	6442214	2002-08-27	Boleskei et al			
RP	19	6144711	2000-11-07	Raleigh et al			
RP	20	6317466	2001-11-13	Foschini et al			
RP	21	6097771	2000-08-01	Foschini			
RP	22	6377631	2002-04-23	Raleigh			
RP	23	6298092	2001-10-02	Heath Jr.			
RP	24	6377636	2002-04-23	Paulraj et al			
RP	25	6351499	2002-02-26	Paulraj et al			
RP	26	6400699	2002-06-04	Airy et al			
RP	27	5610617	1997-03-11	Gans et al			
RP	28	6252548	2001-06-26	Jeon			
RP	29	5577265	1996-11-19	Wheatley, III			
RP	30	6211671	2001-04-03	Shattil			
RP	31	6008760	1999-12-28	Shattil			
RP	32	6370182	2002-04-09	Bierly et al			
RP	33	6362781	2002-03-26	Thomas et al			
RP	34	6377819	2002-04-23	Gesbert et al			
RP	35	6400780	2002-06-04	Rashid-Farrokhi et al			
RP	36	6331837	2001-12-18	Shattil			
RP	37	6473467	2002-10-01	Wallace et al		375	267
RP	38	6636568	2003-10-01	Kadous, Tarner		375	225

US Published Applications

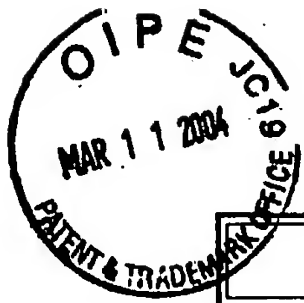


Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
KP	1	20020064246	2002-05-30	Kelkar et al	A1	375	347
KP	2	20020001316	2002-01-03	Hornsby et al	A1	370	487
KP	3	20020136170	2002-09-26	Struhsaker	A1	370	280
KP	4	20020141355	2002-10-03	Struhsaker et al	A1	370	280
KP	5	20020172269	2002-11-21	Xu			
KP	6	20020064246	2002-05-30	Kelkar et al			
KP	7	20020001316	2002-01-03	Hornsby et al			
KP	8	20020072392	2002-06-13	Awater et al			
KP	9	20020122501	2002-09-05	Awater et al			
KP	10	20020158801	2002-10-31	Crilly, Jr. et al			
KP	11	20020159537	2002-10-31	Crilly, Jr.			
KP	12	20020039884	2002-04-04	Raynes et al			
KP	13	20020067309	2002-06-06	Baker et al			
KP	14	20020127978	2002-09-12	Khatri			
KP	15	20020085643	2002-07-04	Kitchener et al			
KP	16	20020118781	2002-08-29	Thomas et al			
KP	17	20020122383	2002-09-05	Wu et al			
KP	18	20020111142	2002-08-15	Klimovitch			
KP	19	20020102950	2002-08-01	Gore et al			
KP	20	20010046255	2001-11-29	Shattil			
KP	21	20020024975	2002-02-28	Hendler			
KP	22	20010012764	2001-08-09	Edwards et al			
KP	23	20010053143	2001-12-20	Li et al			
KP	24	20010015994	2001-08-23	Nam			
KP	25	20020034191	2002-03-21	Shattil			

Signature





Examiner Name	Date
<i>Raj P.</i>	8/21/04



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	System and Method for Antenna Diversity Using Joint Maximal Ratio Combining																										
<p>Application Number: 10/695229 </p> <p>Confirmation Number: 4971</p> <p>First Named Applicant: Gary Sugar</p> <p>Attorney Docket Number: Cognio18US2</p> <p>Art Unit: 2682</p> <p>Search string: (6687492).pn.</p> <p>US Patent Documents</p> <p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td>RP</td><td>1</td><td>6687492</td><td>2004-02-03</td><td>Sugar et al.</td><td>B1</td><td>455</td><td>276.1</td></tr></tbody></table> <p>Signature</p> <table border="1"><thead><tr><th>Examiner Name</th><th>Date</th></tr></thead><tbody><tr><td></td><td>8/21/2004</td></tr></tbody></table>								init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass	RP	1	6687492	2004-02-03	Sugar et al.	B1	455	276.1	Examiner Name	Date		8/21/2004
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass																				
RP	1	6687492	2004-02-03	Sugar et al.	B1	455	276.1																				
Examiner Name	Date																										
	8/21/2004																										



COGNIO, INC.
 101 ORCHARD RIDGE DRIVE, SUITE 350
 GAITHERSBURG, MARYLAND 20878

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.: Cognio18US2
 SERIAL NO.: 10/695,229
 APPLICANT(S): Sugar et al.

GROUP ART UNIT: 2682
 FILING DATE: December 28, 2003
 TODAY'S DATE: March 11, 2004

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Country	Class/Subclass	Translation (Yes or No)
RP AA	WO 02/03568	1/10/2002	PCT		
RP AB	WO 01/45300	6/21/2002	PCT		

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

*Examiner Initial	Author, Title, Date, Pertinent Pages, Etc
RP BA	Iserte, Antonio Pascual et al., "Pre-and Post-Beamforming in MIMO Channels Applied to HIPERLAN/2 and OFDM," IST Summit 2001 (IST Mobile Communications Summit), September, 2001.
RP BB	Iserte, Antonio Pascual et al., "Joint Beamforming Strategies in OFDM-MIMO Systems," ICASSP 2002 (IEEE International Conference on Acoustics, Speech and Signal Processing), May, 2002.
RP BC	Lee, Dennis et al., "Antenna Diversity for an OFDM System in a Fading Channel," Proceeding of IEEE MILCOM 1999, November, 1999, pages 1104-1109.
RP BD	Jakes, William C., "Microwave Mobile Communications," Copyright 1974, pages 313-320 and 489-498.
RP BE	Yeh, Y.S., "An Analysis of Adaptive Retransmission Arrays in a Fading Environment," The Bell System Technical Journal, October, 1970, pages 1811-1825.
RP BF	Morgan, Samuel P., "Interaction of Adaptive Antenna Arrays in an Arbitrary Environment," The Bell System Technical Journal, January, 1965, pages 23-47.
RP BG	Aziz, Abdul M.K. et al., "Indoor Throughput and Range Improvements using Standard Compliant AP Antenna Diversity in IEEE 802.11a and ETSI HIPERLAN/2," Vehicular Technology Conference, 2002, VTC 2001, October 7-11, 2001, IEEE VTS 54 th , Volume 4, pages 2294-2298.
RP BH	Iserte, Antonio Pascual et al., "Iterative Algorithm for the Estimation of Distributed Sources Localization Parameters," SSP 2001 (11 th IEEE Workshop on Statistical Signal Processing), August, 2001.
RP BI	Vaidyanathan et al., "The Role of Lossless Systems in Modern Digital Signal Processing: A Tutorial," IEEE Transactions on Education, Vol. 32, August 1989, pp. 181-197.
RP BJ	Raleigh et al., "Spatio-Temporal Coding for Wireless Communication," IEEE Transactions on Communications, Vol 46., No. 3, March 1998, pp. 357-366.
RP BK	Jungnickel et al., "Performance of a MIMO System with Overlay Pilots," IEEE GlobeCom 2001, pp. 594-598.
RP BL	BLAST High-Level Overview, Lucent Technologies, July 18, 2000

COGNIO, INC.
101 ORCHARD RIDGE DRIVE, SUITE 350
GAITHERSBURG, MARYLAND 20878

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.: Cognio18US2 GROUP ART UNIT: 2682
SERIAL NO.: 10/695,229 FILING DATE: December 28, 2003
APPLICANT(S): Sugar et al. TODAY'S DATE: March 11, 2004

RP BM	Golden et al., "Detection Algorithm and Initial Laboratory Results Using V-BLAST space-time communication architecture," Electronic Letters, January 7, 1999, vol. 35, No. 1.
RP BN	Golden et al., "V-BLAST: A High Capacity Space-Time Architecture for the Rich-Scattering Wireless Channel," Bell Laboratories, Lucent Technologies, Proc. Int'l Symposium on Advanced Radio Technologies, Boulder, CO, September 10, 1998.
RP BO	Wolniansky et al., "V-BLAST: An Architecture for Realizing Very High Data Rates Over the Rich-Scattering Wireless Channel," Proc. ISSSE-98, Pisa, Italy, Sept. 29, 1998.
RP BP	Chizhik et al., "Keyholes, Correlations, and Capacities of Multielement Transmit and Receiver Antennas," IEEE Transactions on Wireless Communications, Vol. 1, No. 2, April 2002, pp. 361-368.
RP BQ	Junqiang et al., "Spatial Multiuser Access with MIMO Smart Antennas for OFDM Systems," IEEE VTC '2001, September, 2001, pp. 1553-1557.
RP BR	Stridh et al., "MIMO Channel Capacity on a Measured Indoor Radio Channel at 5.8 GHz," Proc. Of the Asilomar Conf. on Signals, Systems & Computers, Vol. 1, October, 2000, pp. 733-737.
RP BS	Jungnickel et al., "A MIMO WLAN Based on Linear Channel Inversion," IEE Seminar-MIMO Communication Systems from Concept to Implementation, December, 2001, pp. 20/1-20/6.
RP BT	Stridh et al., "Spatial Characterization of Indoor Radio Channel Measurements at 5 GHz," SAM '2000, March, 2000, pp. 58-62.
RP BU	Irner, Ralf et al., "MISO Concepts for Frequency-Selective Channels," 2002 International Zurich Seminar on Broadband Communications Access, February 19-21, 2002.
RP BV	Choi, Ruly Lai-U et al., "MISO CDMA Transmission with Simplified Receiver for Wireless Communication Handsets," IEEE Transactions on Communications, Vol. 49, No. 5, May, 2002.
RP BW	Meyer-Ottens, Sven et al., "Downlink Beamforming for W-CDMA Using Feedback and Interference Estimate," March 9, 2001.
RP BX	Brunner, Christopher et al., "Downlink Beamforming for WCDMA Based on Uplink Channel Parameters," Proc. EPMCC 1999, pages 375-380, March 1999.
RP BY	Yang, Jian et al., "On Joint Transmitter and Receive Optimization for Multiple-Input-Multiple-Output (MIMO) Transmission Systems," IEEE Transactions on Communications, Vol. 42, No. 12, December, 1994.
RP BZ	Ivrlac, Michel et al., "On Channel Capacity of Correlated MIMO Channels," ITG Fokusprojekt: Mobilkommunikation "Systeme mit intelligenten Antennen", Ilmenau, 2001.
RP CA	BABLAN ET AL., "Optimum Diversity Combining and Equalization in Digital Data Transmission with Applications to Cellular Mobile Radio-PartII: Numerical Results", May 1992, IEEE Transactions on Communications, Vol. 30, No. 5, Pgs. 895-907
RP CB	CHUAH ET AL., "Capacity of Multi-Antenna Array Systems in Indoor Wireless Environment", November 1998, IEEE Globecom
RP CD	WALLACE ET AL., "Experimental Characterization of the MIMO Wireless Channel: Data Acquisition and Analysis", February 27, 2002, Department of Electrical and Computer Engineering, Brigham Young University

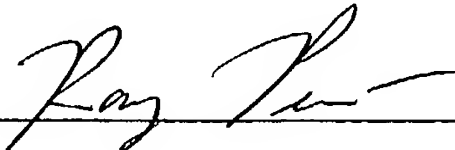
COGNIO, INC.
101 ORCHARD RIDGE DRIVE, SUITE 350
GAITHERSBURG, MARYLAND 20878

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.: Cognio18US2 GROUP ART UNIT: 2682
SERIAL NO.: 10/695,229 FILING DATE: December 28, 2003
APPLICANT(S): Sugar et al. TODAY'S DATE: March 11, 2004

<u>RV</u> CE	LOVE ET AL., "Equal Gain Transmission in Multiple-Input Multiple-Output Wireless Systems", November 2002, Proceedings of IEEE Globecom, pgs. 1124-1128.
<u>LP</u> CE	Lucent Technologies, "Lucent Technologies' Chips Poised to Bring "BLAST" Multiple Input/Multiple Output Technology to Laptops, PDAs and Other Mobile Devices," October 16, 2002, lucent.com.
<u>LP</u> CE	"Lucent's "BLAST" chips to take off in wireless market", October 16, 2002, Semiconductor Business News.
<u>LP</u> CE	HEATH ET AL., "A Simple Scheme for Transmit Diversity Using Partial Channel Feedback," 1998, IEEE.

EXAMINER



DATE CONSIDERED

1 8/21/04

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s)